



B: Amendments to The Claims:

What is claimed is:

1 1. (Currently Amended) A method for use in a computer system  
2 having an integer execution unit (FXU) having an Instruction  
3 Decode and Dispatch Unit (I-Unit) ~~and an integer execution~~  
4 ~~unit (E-unit)~~ of a central processor (CP) of the computer  
5 system and in which said integer execution unit contains an  
6 arithmetic and logical unit (ALU) which is capable of  
7 performing arithmetic functions including binary addition,  
8 subtraction, and logical operations such as logical and,  
9 logical or, and logical exclusive or, wherein said logical  
10 operations for operands which feed the ALU are bit maskable  
11 to select which bits of the operands participate in the  
12 logical operation, comprising the steps of:

13 allowing a partial instruction to be executing during  
14 the instruction dispatch cycle of the computer system by  
15 providing said integer execution unit (FXU) with a  
16 predetermination cycle pipeline stage created to accommodate  
17 a timing critical function used for execution of an  
18 instruction, and overlapping said predetermination cycle  
19 pipeline stage (E-1 stage) with a dispatch cycle of the  
20 Instruction Decode and Dispatch Unit (I-Unit) of said  
21 integer execution unit (FXU) of a central processor (CP) of  
the computer system before an instruction is dispatched.

1` 2. (Currently Amended) The method according to claim 1  
2 wherein ~~the process proceeds by dividing~~ a timing critical  
3 function used for execution of an instruction is divided  
4 into first and second partitioned processes partitioned  
5 among a virtual first and a second pipeline stage of a  
6 single pipeline, said first pipeline stage being said  
predetermination cycle pipeline stage and a virtual stage,

7 and said second pipeline stage being one where a prior  
8 instruction received has been confirmed as valid.

1 3. (Currently Amended) The method according to claim 2  
2 wherein

3 said first partitioned process has said predetermination  
4 cycle (em1) which initiates two cycles before a first cycle  
5 of execution of said instruction when the ~~input~~ operands  
6 feed the ALU and the result of calculations performed in the  
7 ALU is put into a result register and which initiates the  
1 timing critical function for execution of an instruction to  
2 be executed.

3 4. (Currently Amended) The method according to claim 3,  
4 wherein

1 said second partitioned process, which includes said  
2 dispatch cycle, has a first predetermination cycle (e0) and  
3 a second cycle (e1) and a third cycle (PA).

4 5. (Currently Amended) The method according to claim 4  
5 wherein said first predetermination cycle (e0) is initiated  
6 when an instruction is being decoded to determine what  
7 instruction it is in order to setup the controls to the  
8 computer system ALU and the second partitioned process is  
9 used for reading and loading operands into a plurality of  
10 FXU input registers of said computer system's FXU which  
11 second cycle determines whether the timing critical function  
12 of said ~~predetermined~~ predetermination cycle is valid for an  
13 instruction to be executed, and the second cycle (e1)  
14 performs the first cycle of execution of said instruction  
where the input operands feed the ALU and the result is put  
into a result register,

1 and wherein during the third cycle (PA) the contents of  
2 the result register are sent to an architected General  
Purpose Register file (GPR).



1

2 6. (Currently Amended) The method according to claim 5  
wherein said third cycle is a dispatch cycle during which  
1 the contents of the result register are sent to an  
2 architected General Purpose Register file (GPR).

3

7. (Original) The method according to claim 5 wherein said  
1 timing critical function is a mask generation process.

2

3 8. (Original) The method according to claim 5 wherein said  
4 timing critical function determines read addresses for the  
5 GPRs of said computer system.

5

6 9. (Currently Amended) The method according to claim 5  
wherein in the process allowing a partial instruction to be  
1 executing during the instruction dispatch cycle of the  
2 computer system, the three pipeline cycles of the second  
3 partitioned process used for reading and loading operands  
4 into a plurality of FXU input registers in said pipeline  
stages work independently so that they contain three  
1 different instructions in various states of execution.

2

3 10. (Currently Amended) The method according to claim 5  
4 wherein the first partitioned process overlaps with the  
5 Instruction Decode and Dispatch Unit (I-unit) instruction  
pipeline as well as with the execution cycles of earlier in  
1 the pipeline instructions.

2

3 11. (Currently Amended) The method according to claim 5  
4 wherein said predetermination cycle pipeline stage is used  
5 to accommodate a first part of the mask ~~generate~~ generation  
process, and this predetermination cycle pipeline stage (E-1  
1 stage) is inserted before a pipeline execution stage (E0  
2 stage).

3



4 12. (Original) The method according to claim 11, wherein  
5 said predetermination cycle pipeline stage does not increase  
6 the depth of the FXU pipeline and overlaps with the last  
stage or dispatch stage of the Instruction Decode and  
1 Dispatch Unit (I-Unit).

2  
3 13. (Currently Amended) The method according to claim 1  
4 wherein said predetermination cycle pipeline stage also  
5 provides cycle time relief of the first predetermination  
cycle (e0) execution ~~(e0)~~ stage by allowing an extra cycle  
1 to decode the instruction and form GPR read addresses which  
2 need to be launched directly from latches at the beginning  
3 of the ~~E0~~ first predetermination cycle (e0) .

4 14. (Currently Amended) The method according to claim 1  
5 wherein said predetermination cycle pipeline stage is a  
6 stage of the mask ~~generator~~ generation logic which overlaps  
7 with the Instruction Decode and Dispatch Unit (I-unit)  
8 ~~instruction-unit~~ as well as with the execution cycles of  
older (earlier in the pipeline) instructions.

1  
2 15. (Currently Amended) The method according to claim 1  
3 wherein said predetermined cycle pipeline stage is  
implemented as a speculated pipeline stage in which the  
validity of said predetermined cycle pipeline stage is not  
known until a following execution stage, wherein if an  
execution (E0) stage first becomes valid, ~~it is implied that~~  
the predetermined cycle pipeline (E-1) stage is considered  
~~was~~ valid on the cycle before, without impacting a  
subsequent dispatch stage of said I-Unit.

16. (Cancelled) .



C.) Amendments to the Specification:

A substitute specification correcting the spacing was submitted heretofore. No new matter is added by this amendment.



D. AMENDMENT TO THE DRAWINGS - Have already been submitted.